

WEST BOYLSTON WACHUSETT NO. 47 SUBSTATION
TESTIMONY OF DEAN M. LATULIPE, P.E.

Q. Please identify yourself by stating your full name, your business address, and connection or position with respect to the petitioner.

A. My name is Dean M. Latulipe. My business address is 25 Research Drive in Westborough, Massachusetts. I am a Lead Senior Engineer for National Grid USA Service Company, and work in the Transmission Planning department, which provides engineering services for affiliate New England Power Company (NEP or the Company). NEP is one of the subsidiary operating companies of National Grid USA and is a wholesale transmission company. NEP serves its retail affiliates such as Massachusetts Electric Company (MECO) and 24 municipal light departments in Massachusetts.

Q. Are you a registered professional engineer in the Commonwealth of Massachusetts?

A. Yes, I am.

Q. For the record, Mr. Latulipe, will you state your educational and professional qualifications in the field of electric utility planning.

1 A. I graduated in 1992 from SUNY Binghamton University with a Bachelor
2 of Science degree in Electrical Engineering. I received a Master of
3 Science in Electrical Engineering from Michigan Technological
4 University in 1994. Since 1994, I have worked in the planning function of
5 National Grid USA Service Company.

6
7 Q. Are you familiar with the situation and factors which give rise to the
8 zoning exemption petition in connection with the Wachusett No.47
9 Substation in West Boylston?

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11 A. Yes, from the planning standpoint, I am familiar with the matters involved
12 in these petitions as they pertain to the present and future operations of
13 New England Power Company.

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15 Q. Please discuss the purpose and necessity for the proposed expansion of the
16 substation which is the subject of this proceeding.

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18 A. In order to explain the purpose and necessity for the proposed substation
19 expansion in West Boylston, I would first like to refer to the attached
20 report "Central Massachusetts Transmission Study – Long-Term
21 Analysis", Exhibit DML-1.

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1 Figure 2.1 of Exhibit DML-1, a geographic diagram of the Central
2 Massachusetts transmission system, is the subject of a pending Motion for
3 a Protective Order because it contains Critical Energy Infrastructure
4 Information, as defined by the Federal Energy Regulatory Commission. It
5 has been submitted to the Department under seal, pending a decision on
6 the Motion. This figure shows the relationship of the various key
7 transmission facilities in the area, owned and operated by NEP, and their
8 relationship to the various municipal light departments served by NEP.

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10 Figure 3.1, shown on page 5 of Exhibit DML-1, is a one-line diagram
11 showing the existing transmission and substation facilities in the Central
12 Massachusetts area.

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16 REDACTED – SUBJECT TO A PENDING MOTION FOR A
17 PROTECTIVE ORDER.
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5 REDACTED – SUBJECT TO A PENDING MOTION FOR A
6 PROTECTIVE ORDER.
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15 During the first half of 2003, I conducted a reliability study for the Central
16 Massachusetts transmission system. Through conventional loadflow
17 analysis, I found that loss of one of the 448 MVA transformers at Sandy
18 Pond can overload the remaining transformer at Sandy Pond during peak
19 summer load conditions. NEPOOL and National Grid Planning criteria
20 (Exhibits DML-2 and DML-3, respectively) require this post-contingency
21 overload to be eliminated. If not eliminated, this overload could result in
22 the cascading of 345-115 kV transformers overloads throughout New
23 England, and possibly cause total system collapse.

1 To eliminate this post-contingency overload problem, I have developed
2 three (3) viable alternatives , which are discussed on page 24 of DML-1.
3 The first alternative involves the installation of two 345-115 kV
4 autotransformers (448 MVA) at Pratts Junction Substation in Sterling,
5 Massachusetts. This alternative would require the conversion of a 69 kV
6 line between Pratts Junction and Northboro Road Substations to 115 kV.
7 The second alternative involves the installation of two 345-115 kV
8 autotransformers (448 MVA) at Wachusett No. 47 Substation in West
9 Boylston, Massachusetts. This alternative does not require line
10 conversions or the purchase of new property. The third alternative
11 involves the installation of two 345-115 kV autotransformers (448 MVA)
12 at Quinsigamond Junction in West Boylston, Massachusetts. This
13 alternative would require a new substation on a parcel of land that is not
14 presently owned by NEP. The Company would have to purchase this
15 parcel of land, and develop it accordingly. The alternative that was found
16 to resolve all technical issues in the most economical manner was
17 alternative #2: installation of two 345-115 kV autotransformers at the
18 Wachusett No. 47 Substation.
19
20 Loadflow simulations confirm that the proposed additions at Wachusett
21 No. 47 Substation effectively eliminate the post-contingency overload of
22 345-115 kV transformation at Sandy Pond Station.
23

1 Q. Is it your opinion that the proposed expansion of the Wachusett No. 47
2 Substation addition represents the best means to insure a long-range
3 supply to the service area involved?
4

5 A. Yes, that is my opinion.
6

7 7. Q. Based upon the evidence that you have given, and your personal
8 knowledge of this particular project, and your experience in the field of
9 electric utilities, in your opinion, are the facilities which are the subject of
10 this proceeding necessary for the purposes claimed by NEP and described
11 by you, and will they serve the public convenience and be consistent with
12 the public interest?
13

14 A. In my opinion, yes. These facilities are needed to reinforce NEP'S
15 transmission system in the Central Massachusetts region so as to reduce
16 the possibility of overload problems that could result should of one of the
17 two 345-115 kV autotransformers at Sandy Pond Substation fail during
18 heavy load conditions.
19

20 Q. The petition filed in this proceeding asks for a determination by the
21 Department, under Chapter 40A of the General Laws with respect to
22 zoning exemption, that the proposed facilities involved in this proceeding
23 are public service facilities which are necessary for the convenience and

1 welfare of the public as required by the standards of said chapter 10. In
2 your opinion, do the proposed facilities, which are the subject of this
3 hearing, meet these standards?
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5 A. In my opinion, they do.
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LIST OF EXHIBITS

- Exhibit DML-1: Central Massachusetts Transmission Study – Long-Term Analysis
- Exhibit DML-2: NEPOOL Planning Procedure No. 3, Reliability Standards for the
New England Power Pool
- Exhibit DML-3: National Grid Transmission Planning Code